

# 2018 District Budget Hearing: Water Quality Project Needs

## Worksheet for FY 2020 Budget Request

**District:** Nez Perce SWCD

**Contact:** Lynn Rasmussen

### Priority Water Quality Project Needs

#### Project Title: Mission/ Rock Creek Floodplain Restoration Phase 3

##### Description of Project:

The Mission / Rock Creek Floodplain Restoration Phase 3 project is located in the Lapwai Creek watershed near Jacques Spur, Idaho. Project funds will be used to install phase 3 of a 5 phase installation project along 1.7 miles of Mission and Rock Creeks within the Lapwai Creek drainage near Culdesac, Idaho. Phase 3 consists of installation of 0.5 miles of fence, installation of 35 large wood structures, and protection of 775 feet of streambank.

The Mission / Rock Creek Floodplain Restoration Project consists of 5 phases as described below:

- Phase 1 – Stabilization of bridge abutment and confluence of Rock and Mission Creeks. Project completed in 2012 using SRBA funds.
- Phase 2 – Replacement of Mission Creek Bridge with larger structure spanning bankfull and floodprone width. Project installed with SRBA funds.
- Phase 3 – Protection of public and private infrastructure, connection of stream to 100 year floodplain, and addition of large woody debris to provide floodplain roughness and steelhead in-stream habitat complexity.
- Phase 4 – Planting riparian zone and bank protection. Installation of stream crossing in unit 5. Floodplain connectivity.
- Phase 5 – Planting riparian zone in phase 3 construction areas.

This purpose of this project is to improve in-stream aquatic habitat, reduce sediment transport to Mission Creek, and increase floodplain connectivity.

Project Timeline: May 2017- May 2020

Priority: 1

**Resource Concern(s) Addressed:** Mission/Rock Creek does not meet State water quality standards due to excess sediment, nutrients, bacteria levels, high stream temperatures. Does not meet NOAA limiting factors for ESA-listed steelhead for excess sediment channel/bank form and habitat complexity.

##### Available Funding (list all sources):

Federal:	\$221,557
State:	\$0
District:	\$10,000
Other:	\$45,000

Notes:

**Total State Funds Needed To Complete Project:**

**\$75,000**

**Project Title:** Middle Mission Creek and White Road Bridge Designs

*Description of Project:*
**White Road Bridge Design**

The White Bridge project is located along Tom Beall Creek and is the first barrier upstream of the stream's confluence with Lapwai Creek . This barrier was identified in 2004 as a full passage barrier due to the outlet drop exceeding the passage criteria as well as steepness of slope(Taylor, 2004).

Planning and implementation efforts along Tom Beall Creek have been underway since 2013. The 17.36 square mile drainage is a tributary to Lapwai Creek. The objectives of treating this subwatershed within the Lapwai Creek system is to reduce sediment delivery to the stream, increase shading, reconnect the channel to its floodplain, and restore fish passage. The following activities have been completed or are underway within this drainage :

1. Barrier Assessment. This project was completed by the Nez Perce Tribe in 2004. This assessment was funded by the Bonneville Power Administration.
2. Stream Inventory and Assessment completed in 2015 using BPA funds.
3. Stream Temperature monitoring – thermographs and a continuous sampling site have been installed since 2009. Funding is through BPA.
4. Tom Beall Buffer Plan completed in 2016. Plan funded through BPA.
5. Animal Feeding Operation relocation and enhancements. Completed using DEQ 319 and PL566 funds in 2003. Moved a feedlot to another location, installed runoff control measures, and watering system.
6. Riparian Restoration projects along 2.2 miles of stream. Began in 2003 with largest site completed in 2016. Funding through BPA and DEQ 319.
7. 4 barrier designs completed. Funding through BPA and DEQ 319.
8. Tom Beall reconnect project to move stream back to its original channel. Project is in Phase 2 of a 3 part planning process. Funded by BPA
9. Streambank stabilization designs completed for 2 critical areas along public road.

This White Road bridge design is one of the last projects that need to be designed which will allow for fish access to 4.5 miles of stream. The White Bridge structure was originally installed in the 1930s and is a concrete structure and metal pipe extension. The survey, biological assessment and National Historic Preservation Act section 106 consultations will be completed through the BPA project proposal sponsored by the NPSWCD.

The existing structure will be removed, grade control structures installed to prevent downcutting and to allow for fish passage and then a bridge installed. The project funds will be used to contract with an engineer to finish the bridge design component of the project. . Steelhead spawning occurs downstream of the Lapwai and Tom Beall confluence. However adult and juvenile use of Tom Beall Creek is prohibited due to this barrier. Removal of the barrier will result in access to 4.5 miles of stream.

**Mission Creek Design**

The Mission Creek Bridge project is needed to allow access to cropland and a winter feeding area for cattle. The NPSWCD has been working with the private landowner on a stream restoration plan. The habitat restoration plan is slated for completion in February 2019 and consists of a 1.2 mile segment of stream. A project area video was completed in 2016 and is available for viewing on you tube at <https://www.youtube.com/watch?v=ecv31oNplF0&t=9s>. The video shows the stream cross sections, flow volume and vegetation conditions from the spring of 2016.

The landowner has agreed to fence the stream, install large wood, and plant riparian vegetation once the restoration plan is completed. These components will be installed through the NPSWCD BPA funded project in Lapwai Creek. The bridge is needed to allow landowner access, protect spawning habitat and remove a seasonal barrier created by the existing crossing. In order to finalize the restoration plan, a

bridge design is needed. Project funds will be used to contract with an engineer to develop a construction level design package and cost estimates. The existing crossing requires continual maintenance which causes channel disturbance impacting stream channel stability and creating a seasonal passage barrier. The following activities have been completed or are underway within this drainage:

1. The Mission Creek stream restoration plan is funded in the BPA 2016 project with NPSWCD. This plan identifies stream restoration needs along a 1.2 mile segment of Mission Creek.
2. 5 miles downstream of the Mission Creek project site is work identified as Rock Creek Floodplain Restoration Phases 1 through 5. Phases 1 through 2 are completed and Phase 3 is pending funding approval. This work has been funded by the BPA.
3. Mission Creek Bridge barrier removal was completed in November 2016 and is located 5 miles downstream of the proposed project site. Project funded by SRBA.
4. Mission Creek streambank stabilization project is located at the confluence of Mission and Rock Creeks and was completed in 2012. This work was funded by Pacific Coast Salmon Recovery Funds, SRBA, and BPA.
5. Riparian Restoration along 1.7 miles of stream was completed through fencing the stream, installation of 4 alternative water developments and vegetative plantings. This work began in 2007 and was completed in 2016. The work was funded through a combination of DEQ 319, PL566, SRBA, and BPA funds.

<i>Project Timeline:</i>		<i>Priority: 2</i>
<i>Resource Concern(s) Addressed:</i> Mission/Tom Beall Creek does not meet State water quality standards due to excess sediment, nutrients, bacteria levels, high stream temperatures. Does not meet NOAA limiting factors for ESA-listed steelhead for excess sediment channel/bank form and habitat complexity.		
<i>Available Funding (list all sources):</i>		
<i>Federal:</i>		\$61,970
<i>State:</i>		\$0
<i>District:</i>		\$2,200
<i>Other:</i>		\$4,000
<i>Notes:</i>		
<b>Total State Funds Needed To Complete Project:</b>		<b>\$40,000</b>

**Project Title:** Lindsay Creek Water Quality Phase I**Description of Project:**

This project proposes landowner solicitation to all 65 homes along the City of Lewiston's main trunk line, with installation of 10 sewer hookup systems and decommission of these systems. Project sites will be prioritized based on the following:

- proximity to spring, stream, or shallow water aquifer
- age of septic system
- number of bedroom
- record of previous system failure
- other: soils, drainage features, etc.

The landowner cost for each system is approximately \$16,000 dollars to install, \$3,000 for equity buy in and connection fees, \$3,600 to decommission the current septic system, and \$9,200 to construct the line from the home to the trunk main. Design work and construction inspection will be completed by the City of Lewiston.

*The NPSWCD is requesting funds to install 10 systems for Phase I.*

**Project Timeline:** January 2020 to May 2022

**Priority:** 3

**Resource Concern(s) Addressed:**

Surface Water: Lindsay Creek Subbasin Assessment and Total Maximum Daily Loads

Lindsay Creek is a third order tributary to the Clearwater River. DEQ is establishing TMDLs to control bacteria, excess nutrients, and sediment in Lindsay Creek. Lindsay Creek was originally listed as not meeting state water quality standards on the 1998 303(d) list. Pollutants of concern include sediment, nutrients, bacteria, stream temperatures, dissolved oxygen, and flow alteration and habitat alteration.

**BACTERIA**

Monitoring conducted in April 2005 indicates that the development of bacteria TMDL is needed to comply with Idaho water quality standards. Forty-one percent of the E. coli bacteria samples collected during the 2001-2002 monitoring season were measured and found to be above Idaho's instantaneous water quality criterion, defined in IDAPA 58.01.02.251. Water quality monitoring conducted in 2005 showed E. coli bacteria in Lindsay Creek were above Idaho's water quality standard.

Consequently, an E. coli bacteria TMDL was developed and allocated a daily concentration equal to the state standard to all nonpoint sources contributing E. coli bacteria to the Lindsay Creek watershed. As such, all contributing sources should be reduced by 66%.

**NUTRIENTS**

A nutrient TMDL has been developed to initiate protective ground water quality management actions, reduce nitrogen loading to the creek, and address the effects on the cold water aquatic life in the creek. Ground water flow to Lindsay Creek is significant year round, and nitrogen concentrations in ground water are typically measured as nitrite plus nitrate as nitrogen (nitrite+nitrate-N). Nitrite (NO<sub>2</sub>) is a compound that is short an oxygen molecule comparatively, and when exposed to oxygen changes to nitrate (NO<sub>3</sub>). Total phosphorus concentrations ranged from 0.045 mg/L to 1.7 mg/L. The collective annual average was 0.203 mg/L.

Elevated nutrient levels in Lindsay Creek appear to originate within the watershed and from ground water springs entering the watershed. Nitrogen concentrations in the groundwater indicate impacts are occurring to ground water quality, causing nitrogen concentrations to exceed the ground water management action threshold.

**Funding (list all sources):**

<i>Federal:</i>	\$0
<i>State:</i>	\$0
<i>District:</i>	\$0
<i>Other:</i>	\$0
<i>Notes:</i>	
<b><i>Total State Funds Needed To Complete Project:</i></b>	<b>\$364,070</b>

<b>Project Title:</b> Tammany Road Erosion Reduction Phase III	
<p><b>Description of Project:</b></p> <p>This application represents the third phase of a four-phase proposal to coordinate the implementation of restoration/protection practices to address the water quality issues identified in the Tammany Creek Subbasin TMDL.</p> <p>Phases I and II of this proposal were funded by DEQ in 2003 and 2009 respectively. Phase I addressed cropland sheet and rill erosion sediment sources. Phase II resulted in the completion of a road and streambank erosion inventory and assessment and the treatment of over 5,000 LF of eroding road ditches along the East side of Vollmer Road. The assessments were needed to identify and prioritize both road related and streambank related sediment sources. Both roads and streambanks were identified in the TMDL as sources.</p> <p>Phase III will focus on reducing sediment from road sources as identified in the Tammany Creek Road Erosion Inventory and Assessment Final Report (Hall, 2011).</p> <p>Phase IV will address streambank erosion within the watershed.</p> <p>This application is part of Phase III.</p> <p>The site highlighted in Phase III is located along the West side of Vollmer Road (Attachment 1). The proposal includes the treatment of approximately 5,000 LF of road along the west side of Vollmer Road. This segment has a high sediment delivery rate to Tammany Creek with estimated erosion rates of 531 tons/year. Installation measures include a rock lined ditch, bank shaping and vegetation establishment. Installation measures have an estimated sediment reduction of 95%.</p> <p>The east road side was treated in in 2011 and has shown no sediment at the road outlet for the past three seasons. A recent run-off event in June 2014 illustrated the need for additional treatments on the West side (photos in Attachment 1). The west road ditch continues to erode, not only the ditch banks but causes three gullies in the adjacent cropland field. Due to the high success of previous treatments and the need for additional work the Nez Perce Soil and Water Conservation District coordinated with Nez Perce County and obtained their support. Nez Perce County will install the treatment measures. Tammany Creek is a high priority for TMDL activities based on existing water quality data. These data indicated impairments of excessive sediment, nutrients, pathogens and high stream temperatures. Tammany Creek flows through Hells Gate State Park and Marina. This park is a major recreation area for local residents and tourists primarily due to its swimming, fishing, and boating opportunities. Poor water quality from Tammany Creek directly impacts these recreational uses.</p>	
<b>Project Timeline:</b> June 2020 to October 2020	<b>Priority:</b>
<p><b>Resource Concern(s) Addressed:</b></p> <p>Implementing the project would assist in achieving implementation plan goals by reducing an estimated 580 tons/year of sediment delivered to the stream.</p>	
<b>Funding (list all sources):</b>	
<i>Federal:</i>	\$0
<i>State:</i>	\$0
<i>District:</i>	\$0
<i>Other:</i>	\$0
<b>Notes:</b>	
<b>Total State Funds Needed To Complete Project:</b>	<b>\$109,000</b>

<b>Project Title:</b> Lapwai Creek Upland Treatments	
<p><b>Description of Project:</b></p> <p>The Nez Perce Soil and Water Conservation District (NPSWCD) is requesting funds to install steelhead habitat improvements within three geographic assessment units in the Lapwai Creek watershed . The NPSWCD proposes to implement habitat improvement projects to address one of the primary limiting factors impacting the productivity and viability of Lapwai Creek. This project proposal focuses on the increased sediment limiting factor. Funds will be used to install conservation treatments for sheet, rill, gully, streambank and road related erosion on cropland areas within three of the priority assessment units within the watershed.</p> <p>The OSC board has previously reviewed this proposal at the 2014 SRBA funding hearing. The project was not funded due to lack of SRBA funding .</p> <p>During the Northwest Power and Conservation Council's (NPCC) geographic review process conducted in 2013, three objectives and seven deliverables were identified for the Lapwai Creek watershed for project focus in the next five years. The objectives and deliverables include:</p> <p>Objective 1 – Reduce Stream Temperatures</p> <p>Objective 2 – Improve Aquatic Habitat Diversity and Complexity</p> <p>Objective 3 – Reduce Instream Sedimentation</p> <p>Deliverable 1 – Improve Riparian Condition</p> <p>Deliverable 2 – Reduce Streambank Erosion</p> <p>Deliverable 3 – Reduce Road Related Sediment Delivery to the Stream</p> <p>Deliverable 4 – Reduce Sediment Delivery to Streams from Uplands</p> <p>Deliverable 5 – Remove or Retrofit Fish Barriers</p> <p>Deliverable 6 – Restore Floodplain Access and Reconnect Channel</p> <p>Deliverable 7 – Improve Watershed Hydrology</p>	
<b>Project Timeline:</b> June 2020 to December 2023	<b>Priority:</b>
<b>Resource Concern(s) Addressed:</b>	
<b>Funding (list all sources):</b>	
<i>Federal:</i>	\$0
<i>State:</i>	\$0
<i>District:</i>	\$0
<i>Other:</i>	\$0
<b>Notes:</b>	
<b>Total State Funds Needed To Complete Project:</b>	<b>\$265,271</b>